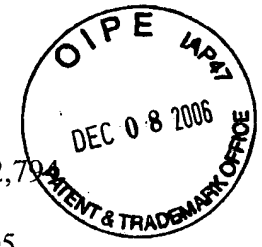
Docket No.: 043887-0181 **PATENT**

IFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re Application of	:	Customer Number: 20277
Masayuki ONO, et al.	:	Confirmation Number: 4041
Application No.: 10/562,794	:	Group Art Unit: 2879
Filed: December 29, 2005	:	Examiner: Not yet assigned

For: LIGHT EMITTING ELEMENT AND DISPLAY DEVICE

LETTER TRANSMITTING
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Mail Stop OIPE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is the International Preliminary Examination Report, dated May 15, 2006, concerning International Application No. PCT/JP2004/009677, filed on July 1, 2004, along with form PCT/ISA/237. The references cited in the search report were previously submitted on December 29, 2005.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

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Date: December 8, 2006

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
OF COPIES OF TRANSLATION
OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44*bis*.3(c) and 72.2)

To:

KAWAMIYA, Osamu
Aoyama & Partners
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Osaka-shi, Osaka 5400001
JAPON

Date of mailing *(day/month/year)* 26 May 2006 (26.05.2006)	
Applicant's or agent's file reference 664575	**IMPORTANT NOTIFICATION**
International application No. PCT/JP2004/009677	International filing date *(day/month/year)* 01 July 2004 (01.07.2004)
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD. et al	

1. **Transmittal of the translation to the applicant.**

☑ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).

☐ The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. **Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

None

The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

AE, AG, AL, AM, AP, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EA, EC, EE, EG, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OA, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

3. **Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Masashi Honda
Facsimile No.+41 22 740 14 35	Facsimile No.+41 22 338 70 10

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 664575	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/JP2004/009677	International filing date *(day/month/year)* 01 July 2004 (01.07.2004)	Priority date *(day/month/year)* 02 July 2003 (02.07.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☒	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 15 May 2006 (15.05.2006)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Authorized officer Masashi Honda Telephone No. +41 22 338 70 10

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference 664575	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2004/009677	01.07.2004	02.07.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant
MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

1. This opinion contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☒	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP Facsimile No.	Authorized officer Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/009677

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in the international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/009677

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-22	YES
	Claims		NO
Inventive step (IS)	Claims	5-8, 12-14	YES
	Claims	1-4, 9-11, 15-22	NO
Industrial applicability (IA)	Claims	1-22	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP 2001-43977 A (TDK Corp.), 16 February 2001
Document 2: JP 2000-223264 A (Pioneer Co., Ltd.), 11 August 2000
Document 3: JP 8-306485 A (Japan Research and Development Corp.), 22 November 1996
Document 4: JP 63-66282 A (Japan Research and Development Corp., Stanley Electric Co., Ltd.), 24 March 1988
Document 5: JP 63-318092 A (Stanley Electric Co., Ltd.), 26 December 1988
Document 6: JP 2003-115385 A (Japan Science & Technology Corp.; Hitachi Ltd.), 18 April 2003

The inventions of claims 1-2, 4 do not appear to involve an inventive step based on documents 1-2 cited in the ISR. The light-emitting element in the invention of claims 1-2 of the present application and the EL element disclosed in document 1 (in particular, see Par. Nos. 0013-0014, 0054-0058 and Fig. 1) differ in that the inorganic fluorescent layer in the light emitting layer is "covered with an organic material on at least part of the surface) in the inventions of claims 1-2 of the present application, whereas in the invention described in document 1, this layer is not covered with the organic material". In other aspects the two elements are identical (referred to herein below as "difference 1").

This difference 1 is examined below.

For example, as disclosed in document 2 (in particular, see Fig. 1), forming a hole transport layer or an electron transport layer from an organic substance in a light-emitting element of a carrier injection type represents well-known technology. If a hole transport layer or an electron transport layer in the ESL element described in document 1 is composed of an organic substance, then the inorganic fluorescent layer will be "covered with an organic material on at least of the surface."

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/009677

Box No. VIII **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The object of the inventions of claims 1-5, 15-22 is to provide a light-emitting element that can be driven by a low voltage and has a high brightness and a long service life and a display device using such light-emitting element.

However, the description of the invention does not clearly demonstrate that this object can be attained with an EL element in which a light-emitting layer is covered with an organic material other than an electrically conductive material having hole transport capability or electron transport capability. Therefore, the inventions of claims 1-5, 15-22 cannot be said to be supported by the detailed description of the invention.

The object of the inventions of claims 9-12, 15-22 is to provide a light-emitting element that can be driven by a low voltage and has a high brightness and a long service life and a display device using such light-emitting element.

However, the description of the invention does not clearly demonstrate that this object can be attained with an EL element comprising fluorescent particles covered with an organic material that is not electrically conductive. Therefore, the inventions of claims 9-12, 15-22 cannot be said to be supported by the detailed description of the invention.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

The invention of claim 3 does not appear to involve an inventive step based on documents 1-2 cited in the ISR. Providing a substrate on both sides of an EL is merely a feature that can be appropriately designed by a person skilled in the art.

The inventions of claim 9-11 do not appear to involve an inventive step based on documents 3-5 cited in the ISR.

Comparison of the inventions of claims 9-11 and the inventions of documents 3-4 demonstrates that there is the following second difference therebetween and that they are identical in other aspects thereof.

The light-emitting element in the inventions of claims 9-11 have "a hole transport layer" and "an electron transport layer", whereas the EL element in the invention described in documents 3, 4 do not have "a hole transport layer" or "an electron transport layer" (referred to herein below as "difference 2").

Furthermore, the inorganic fluorescent particles in the inventions of claims 9-11 are covered with an organic material on at least part of the surface, whereas the EL element in the inventions described in documents 3-4 are not covered with an electrically conductive organic material (referred to herein below as "difference 3").

This difference 2 is examined herein below.

For example, as disclosed in document 2 (in particular, see Fig. 1), providing a hole transport layer or an electron transport layer in the light-emitting element of a carrier injection type is a well-known technology. Therefore, providing a hole transport layer or an electron transport layer in the inventions described in documents 3-4 would be easy for a person skilled in the art.

This difference 3 is examined herein below.

As disclosed in section "Prior Art" of document 5, it is well known to a person skilled in the art that an electrically conductive layer has to be provided, e.g., on the crystal surface in order to induce the fluorescent substance to emit EL. Furthermore, because organic electrically conductive materials are obviously well known, covering semiconductive fluorescent microparticles with an electrically conductive organic material in the inventions described in documents 3-4 would be easy for a person skilled in the art.

The invention of claim 15 does not appear to involve an inventive step based on documents 1-4 cited in the ISR.

Oxides, such as Zn oxide are well known as matrix materials for semiconductors, as described, for example, in document 4.

The inventions of claims 16-18 do not appear to involve an inventive step based on documents 1-5 cited in the ISR.

Features restricted by those claims obviously represent well-known technology in the field of EL elements of a carrier injection type and can be appropriately designed at the implementation stage by a person skilled in the art.

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Supplemental Box

Continuation of: Box V

The inventions of claims 19-22 do not appear to involve an inventive step based on documents 1-6 cited in the ISR.

As disclosed in document 6 (in particular, see Par. Nos. 0013-0021, 0023-0024, and Fig. 4), EL display devices of an active matrix type having thin-film transistors represent well-known technology and creating a display device of an active matrix type that has thin-film transistors from EL elements disclosed in document 3 would not be that difficult.

The inventions of claims 5-8, 12-14 are not described in any of the documents cited in the ISR and are not obvious to a person skilled in the art.